

PRODUCT DESCRIPTION

C-THERM S100 and C-THERM S101 FD are single component intumescent coatings for passive fire protection of structural steel. They have the following main properties:

- Provide up to 120 minutes protection from cellulosic fires
- Certified according to European Standard EN 13381-8 for metal structures
- Certified according to European Standard EN 13501-1 for wood fireproofing
- Can be applied onto both internal and external steelwork (with a suitable approved topcoat)
- C-THERM S101 FD is faster drying than C-THERM S100. Both products are identical when dry
- CE Marking product.

INTENDED USES

Passive cellulosic fire protection of metallic structures.

PROPERTIES

Finish	Matt
Colour	White
Components	1
Solids by volume	75 % (ISO 3233) Slight variations ($\pm 3\%$) may occur due to testing variances.
Specific weight	1.34 \pm 0.02 g/mL
Dry film thickness (per coat)	S100: 200 – 1500 μ m S101 FD: 200 – 1000 μ m Maximum dry film thickness per coat depends on application method:

	S100	S101 FD
Airless spray	1500 μ m	1000 μ m
Brush	400 μ m	400 μ m
Roller	250 μ m	250 μ m

The recommended final dry film thickness depends on the section factor of the steel profile, the desired fire resistance time period and the critical failure temperature. For more detailed information, please consult the official product resistance loading tables.

Number of coats

Depends on the dry film thickness required for the degree of fire protection and the application process.

We recommend that the technical data sheet is periodically checked to ensure that it is the most recent version. CIN guarantees that its products conform to the specifications as detailed in the respective technical data sheets. CIN cannot under any circumstances be held responsible for the consequences of technical information given prior to or after purchase of products. This is merely of an advisory nature, given in good faith and to the best of its knowledge, and based on current technical know-how. Claims can only be accepted for products which have manufacturing defects or which do not conform to the purchase order. CIN will, at its discretion, either replace the defective goods or reimburse the customer. CIN cannot accept responsibility for any other loss or damage. All sales are subject to our general terms and conditions of sales that we advise should be read carefully.

7I-100 C-THERM® S100
7I-101 C-THERM® S101 FD
Solvent based intumescent coatings

Revision: May 2020

Application method Airless or conventional spray, brush and roller.

Theoretical coverage 3.75 m²/L at 200 µm
 1.00 m²/L at 750 µm
 0.50 m²/L at 1500 µm

Allow for application losses, surface irregularities, etc.

Drying times and overcoating

At 20 °C:

S100

	200 µm	750 µm
To touch	45 min	60 min
To handle	4 h	24 h
To recoat (with itself)	Min 4 h Max extended ^{a)}	Min 6 h Max extended ^{a)}

S101 FD

	200 µm	750 µm
To touch	30 min	45 min
To handle	3 h	16 h
To recoat (with itself)	Min 3 h Max extended ^{a)}	Min 4 h Max extended ^{a)}

All figures above are given as a guide only, practical drying times will depend on factors such as temperature, humidity, air flow and film thickness.

Overcoating with topcoats at 20 °C

Dry film thickness up to 750 µm.

Topcoat	S100	S101 FD
C-Cryl S410 HB	Min 24 h Max extended ^{a)}	Min 4 h Max extended ^{a)}
Other CIN recommended Topcoats	Min 48 h Max extended ^{a)}	Min 24 h Max extended ^{a)}

a) The previous coat must be free of contaminants, adherent and cohesive.

PAINT SYSTEMS

Primers: Imprimex SR or other alkyd primers, C-Pox Primer ZN800 or other zinc rich epoxy primers, C-Pox Primer ZP160 FD or other zinc phosphate epoxy primers.

Topcoats: C-Cryl S410 HB or other solvent based acrylic topcoat, C-Cryl W680 or other aqueous based acrylic topcoat, C-Thane S350 or other polyurethane topcoat. All CIN recommended topcoats have a minimum fire classification of B-s1, d0.

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For steel structures exposed externally or internal but with high humidity levels or condensation, a minimum of 2 coats of an approved polyurethane topcoat, with a minimum total dry film thickness of 120 µm, must be applied before the intumescent coating is exposed to such conditions.

As for many intumescent coatings of this type, contact with water may alter its properties. For outdoor environments or indoor environments with high humidity levels or condensation, it is necessary to define and apply a maintenance plan to check the integrity of the paint system. In such environments, it is essential that the paint system is not subjected to ponding or pooling water at any time.

Maintenance: for the painting of structures already painted, the existing system should be completely removed and primed again (please, see recommended paint systems), or, in case it was not possible, it should be sanded before applying the intumescent paint.

SURFACE PREPARATION

The performance of the protective painting system is proportional to surface preparation. Before intumescent coatings application, please ensure that the selected primer is well adhered, clean, dry and free from any surface contamination.

Wood structures

Remove dust, grease and other contaminants. After this, realize a subsequent sanding with coarse grade sandpaper.

APPLICATION

In confined areas ventilate with clean air. During application and drying until solvents are removed.

Room and drying application conditions:

Temperature	S100:	5 – 45 °C
	S101 FD:	5 – 25 °C
Relative humidity		< 85%
Minimum surface temperature		3 °C above the dew point.

Application Equipment:

Airless spray	Recommended
Fluid tip orifice size	0.019 – 0.025 inches (0.48 – 0.64 mm)
Fluid pump	Minimum 45 : 1
Fluid pressure	160 – 180 kg/cm ²
Thinning	0 – 5 %
Conventional spray	
Fluid tip orifice size	0.086 – 0.125 inches (2.18 – 3.17 mm)
Air pressure	3.1 – 5.3 kg/cm ²
Fluid pressure	2.0 – 2.5 kg/cm ²
Thinning	5 – 10 %

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Brush	
Thinning	0 – 5 %
Roller	
Thinning	5 – 10 %
Thinner	S100: 7Q-240 (Dil. CP-20) S101 FD: 59-520 (Dil. Me)
Cleaner	7Q-240 (Dil. CP-20)

APPROVALS AND CERTIFICATES
Fire Resistance:

C-THERM S100 and C-THERM S101 FD have been tested according to EN13381-8 for resistance to cellulosic fires for up to 120 minutes.

Reaction to fire:


C-THERM S100 and C-THERM S101 FD show class C-s2, d0 for the reaction to fire, according to EN 13501-1 for metal structures.

C-THERM S100 and C-THERM S101 FD show class B-s1, d0 for the reaction to fire, according to EN 13501-1, for wood (application: 0.5 L/m²).

CE Marking

CE Marking of this product is the evidence given by CIN that this product is subject to the provisions of Community Directives of the Construction Products that are applicable with European Regulation nr. 305/2011 on March, 9 of 2011 and the EAD 350402-00-1106 Guide "Reactive paints for fire protection of steel elements."

This product conforms to the requirements of the EAD 350402-00-1106 Guide and it has the Declaration of Performance made from ETA 19/0208 by Instituto de Ciencias de la Construcción E. Torroja.

 1219	
CIN – Corporação Industrial do Norte, S.A. Avenida Dom Mendo, 831 4474 – 009 – Maia - Portugal 19	
ETA 19/0208 EAD 350402-00-1106	
Product for Fire Protection C-THERM S100 / C-THERM S101 FD See ETA for its outstanding characteristics and dangerous substances	
Fire Reaction	C-s2, d0 according EN13501-1.

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ADDITIONAL INFORMATION**Curing mechanism** – By solvent release^{D)}

b) The drying process of a product is strongly influenced by room conditions. Solvent retention can occur when a high film thickness per coat is applied, normally at high temperatures, strong winds or directly in sunlight exposure conditions. In this case, CIN recommend the application of a lower film thickness per coat up to a maximum of 750 µm dry film thickness, or the equivalent of 1000 µm wet film thickness.

Volatile Organic Compounds (VOC)

EU limit for this product (cat. A/i): 500 g/L

These products contain:

- S100: max. 396 g/L COV (TVOCC: 31 %)

- S101 FD: max. 395 g/L (TVOCC: 31 %)*

Supplying form: < 348 g/L (TVOC: < 26 %)

COV thinner 7Q-240: 872 g/L (TVOC: 100 %)

COV thinner 59-520: 865 g/L (TVOC: 100%)

COV cleaner: 872 g/L (TVOC: 100 %)

* The VOC value shown above refers to a ready for use product, as tinted, thinned, etc in accordance with our recommendations. We are not responsible for products obtained by mixing products which are different from those we have recommended and we must draw attention to the responsibility of anyone involved within the supply chain not to infringe Directive 2004/12/CE.

Flash Point

	S100	S101 FD
Product	29 °C	4 °C
Thinner	31 °C	4 °C
Cleaner	31 °C	31 °C

Packaging

Product 20 L

Storage

2 years when stored indoors in original containers at 5 to 40 °C.

HEALTH, SAFETY AND THE ENVIRONMENT

Protect the eyes and skin from contact, gloves, goggles and appropriate clothing should be worn. Keep out of the reach of children. Use only in well ventilated areas. Do not empty into drains. Keep the container properly sealed and stored in the correct place. Take correct measures when transporting the product so as to avoid any accidents that could rupture the can or cause damage to the packaging. Ensure that the container is correctly stacked in a safe area. Do not store or use the product in extreme temperature conditions. Always take account of the appropriate legislation relating to the environmental and Health and Safety at Work.

For more information it is essential to read the label on the container and the product MATERIAL SAFETY DATA SHEET of this product, its components and all complementary products referred on Technical Data Sheet.

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